

### **REMARKS**

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

Claims 1-14 are pending in this application. By this Amendment, claims 1-4 and 6-13 are amended, claims 5 and 14 are cancelled, and claims 15-19 are added.

The claims are amended to place them in more conventional form according to U.S. practice.

Claim 1 incorporates the feature from claim 5 that "the amount of the organic compound in total is at most 1 wt% based on the amount of molten urea," as a result of which claim 5 is cancelled. Claim 1 has been amended to encompass the possibility of separate (or combined) addition of the polyvinyl compound and organic compound to the molten urea, based on the disclosure in the sentence bridging pages 2 and 3 of the specification.

Claims 1-4 and 6-13 are amended to make grammatical changes that are self-explanatory.

New claim 15 is directed to the preferred range deleted from claim 13.

New claim 16 is directed to the preferred range deleted from claim 10.

New claim 17 corresponds to original claim 14.

New claims 18 and 19 correspond to claims 7 and 10, but are directed to the composition.

#### **I. Claim Objections**

The Examiner objects to claims 3, 5 and 6 because of minor informalities. By this Amendment, claims 3 and 6 are amended to make grammatical changes that are self-explanatory, and claim 5 is cancelled, rendering the objection moot.

#### **II. Claim Rejection Under 35 U.S.C. § 112**

The Examiner asserts that claims 10 and 13 recite a broad recitation and a narrower statement of the range/limitation, and that claim 14 is indefinite. By this Amendment, claims 10 and 13 are amended to delete the narrower recitation in each claim, and claim 14 is cancelled, rendering the assertions moot.

III. **Claim Rejection Under 35 U.S.C. § 101**

The Examiner rejects claim 14 under 35 U.S.C. § 101 because of the claimed recitation of a use. By this Amendment, claim 14 is cancelled, rendering the rejection moot.

IV. **Claim Rejection Under 35 U.S.C. § 102**

The Examiner rejects claims 1-3 and 5-14 under 35 U.S.C. § 102(b) as being anticipated by Velzel et al. (WO 02/20471). Applicants respectfully traverse the rejection.

Amended claim 1 recites “A method of improving the crushing strength, impact resistance and compressibility of urea granules, comprising adding to molten urea, **both** a polyvinyl compound, and an organic compound having 1-10 carbon atoms and 1-10 polar organic groups, wherein the amount of the organic compound in total is **at most 1 wt%**, based on the amount of molten urea.”

The Velzel et al. reference does not disclose each and every feature of claim 1. As discussed in the present specification, the reference discloses a method in which a combination of a polyvinyl compound and an **inorganic salt** is admixed with a urea melt (see page 2, lines 11-21 of the specification, and page 4, lines 26-35 of the reference). In particular, the reference discloses a salt where the cation is ammonium or elements from groups I-III of the periodic table (i.e., inorganic salts) (see page 5, lines 16-26).

However, the reference does not disclose or suggest the addition of both a polyvinyl compound **and an organic compound having 1-10 carbon atoms and 1-10 polar organic groups**. The addition of small amounts of such an organic compound, in addition to the polyvinyl compound, produces urea granules with improved crushing strength, impact resistance and compressibility.

Moreover, the reference discloses a method of adding a polyvinyl compound to a salt of an inorganic or organic acid (see page 5, lines 29-32). However, the chemistry, interactions and effect of the crystallization of a salt of an acid are quite different from a neutral acid.

In addition, amended claim 1 recites “the amount of the organic compound in total is **at most 1 wt%**, based on the amount of molten urea.” However, the concentration of the inorganic salt in the Velzel et al. reference is **up to 10 wt%**, based on the amount of urea (see page 5, lines 26-28).

Accordingly, the reference does not disclose or suggest the method of claim 1 comprising adding both a polyvinyl compound, and an organic compound in the recited quantity of at most 1 wt%. Therefore, claim 1 is not anticipated by the Velzel et al. reference. Claims 2, 3 and 6-13 depend directly or indirectly from claim 1, and thus also are not anticipated by the reference. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**V. Claim Rejection Under 35 U.S.C. § 103**

The Examiner rejects claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Velzel et al. in view of the Merriam-Webster Dictionary. Applicants respectfully traverse the rejection.

The arguments above regarding claim 1 (on which claim 4 depends) and the Velzel et al. reference are equally applicable to this rejection.

Claim 4 recites that the organic molecule is pentaerythritol. The Examiner asserts that it would have been obvious to try pentaerythritol as the polyol since the Velzel et al. reference mentions the useage of numerous other polyols such as polyaspartic acid, poly(acrylic acid) and poly(vinylalcohol) that may be used to create the strengthened urea. However, the chemical properties of a polymer are very different from the properties of chemical monomers. In the reference, poly(vinylalcohols) are used as additives, and their chemical properties are thus very different from those of the monomer pentaerythritol.

Therefore, claim 4 would not have been obvious over the Velzel et al. reference in view of the Merriam-Webster Dictionary. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**VI. New Claims**

New claims 15 and 16 depend indirectly from claim 1, and thus are distinguished over the references for the reasons identified above with respect to claim 1.

New claim 17 is directed to a composition comprising a polyvinyl compound, and an organic compound having 1-10 carbon atoms and 1-10 polar organic groups. Claim 17 is distinguished over the Velzel et al. reference, because the reference does not teach a composition comprising both a polyvinyl compound **and an organic compound**. Thus, claim 17 is not anticipated by the reference, and would not have been rendered obvious by the reference.

New claims 18 and 19 depend from claim 17, and thus are also not anticipated by the reference, and would not have been rendered obvious by the reference for at least this reason.

Accordingly, prompt examination and allowance of new claims 15-19 are respectfully requested.

**VII. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-4 and 6-13, and prompt examination and allowance of new claims 15-19 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place the application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

Erik BIJPOST et al.

By: 

Andrew B. Freistein  
Registration No. 52,917  
Attorney for Applicants

MRD/ABF/rgf  
Washington, D.C. 20005-1503  
Telephone (202) 721-8200  
Facsimile (202) 721-8250  
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